



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,030	07/11/2001	Randal Raymond Stark	24-NS-6032	4335
23465	7590	10/27/2003	EXAMINER	
JOHN S. BEULICK C/O ARMSTRONG TEASDALE, LLP ONE METROPOLITAN SQUARE SUITE 2600 ST LOUIS, MO 63102-2740			WEST, JEFFREY R	
			ART UNIT	PAPER NUMBER
			2857	
DATE MAILED: 10/27/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/682,030	STARK ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Jeffrey R. West	2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

- 1) Responsive to communication(s) filed on 08 September 2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

- 4) Claim(s) 1-9 and 11-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-9 and 11-31 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 ... Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on 06 February 2003 is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### **Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### **Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>16</u> | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-6, 11, 14, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,817,958 to Uchida et al. in view of U.S. Patent Application Publication No. 2001/0056335-A1 to Ikeda et al. and U.S. Patent No. 6,487,518 to Miyazaki et al.

Uchida discloses an automatic plant monitoring and diagnosing method/system as well as a plant equipped with the system, wherein the plant is a boiling water or pressurized water nuclear reactor plant (column 1, lines 12-18), and the system further comprises a first input means for receiving detection data of plant operating conditions, apparatus operating conditions, such as jet pump (column 1, lines 50-51) and core spray (column 2, lines 16-18) conditions, and environmental conditions, a second input means for receiving plant inspection data, a first input data processing means for preparing data for use in plant monitoring and diagnosis based on the detection data from the first input means, a second input data processing means for preparing data for use in plant monitoring and diagnosis based on the inspection data from the second input means, and a plant chart (i.e. database) for storing the

data prepared by the first and second input data processing means (i.e. cross-referencing the operating data and the inspection data) along with past/historical inspection data/results (column 3, lines 14-20 and 35-46) for use in the plant monitoring and diagnosis (column 4, lines 18-31).

Uchida also discloses that the operating conditions of each apparatus in the plant is detected by their respective detection means and is accumulated, and updated (column 6, lines 22-23), in the appropriate storage means continuously through an on-line monitor (column 6, lines 7-12) and that the collected apparatus data and inspection data are sent to a central control room where they are combined (column 7, lines 18-25) and displayed to allow a user to inquire about the condition of a particular apparatus or location wherein the automated system then calculates the residual life evaluation, for presentation to the user, along with the apparatus/member name, apparatus description, and the material name (column 16, lines 19-40, column 19, lines 9-18, and Figure 17A). Uchida also discloses inputting inspection data including material names as well as engineering conditions, such as the conditions of welds (column 13, lines 48-60).

Although Uchida does disclose sending data to a central location, Uchida does not teach the corresponding method or system for performing this function. Uchida also does not specifically disclose modifying the next required inspection of each plant component based upon inspection result information to provide a sortable schedule of future inspection requirements.

Ikeda teaches a remote monitoring diagnostics system and method for providing centralized remote monitoring of multiple power plants (0002) comprising collecting and storing, to a centralized database, operating plant data, the database also containing past plant data associated with errors having occurred to the plant and actions taken to cope with the errors, and analyzing the plant data according to the database in order to send a report to the user of the plant regarding the causes for, or action to cope with, the error in the plant (0006). Ikeda teaches that a field monitoring/client system collecting plant data from the controller of the power plant transmits the plant data, for downloading, to a remote monitoring center over a public phone line, or an Internet connection (0017), in response to a request for information (0020), and sending information, for downloading, from the remote monitoring center to the field monitoring/client system (0031). Ikeda also teaches that, upon the occurrence of an error and in response to a request to search the database for relevant error information (0064), the local field monitoring system retrieves the requested information and provides a report to be downloaded by the maintenance engineer wherein the report contains data indicating when the error occurred, the name of the plant where the error occurred, and the contents of the error (0024). Ikeda also teaches communicating and connecting, over a server, the remote monitoring center to the field monitoring/client center through a Firewall (0031 and 0035).

Miyazaki discloses an inspection management system for components of a power generation plant (column 1, lines 7-11) through comparisons between

previous and current inspection data (column 3, lines 18-25) comprising obtaining measurement data, classified by component (column 6, lines 53-64), and current inspection results, and modifying the next required inspection of the plant component based upon the inspection results (column 8, lines 1-17) to provide a schedule of future inspection requirements able to be arranged (i.e. sortable) by criteria satisfaction with respect to the specific components (column 8, lines 34-63) and notifying the user of the updated inspection schedule, with the corresponding calculated information affecting the schedule, through a printer or CRT (column 8, lines 64-65).

It would have been obvious to one having ordinary skill in the art to modify the invention of Uchida to include a corresponding method and system for sending data to a central location, as taught by Ikeda, because Uchida does teach sending data to a central location (column 7, lines 18-25) and, as suggested by Ikeda, the combination would have provided a method for monitoring a plant, or monitoring a plurality of plants conveniently from one location, with clear results presented to skilled maintenance workers to significantly reduce the time and effort required to solve any pending problems (0003-0004) as well as prevented a third party from accessing transmitted plant data (0035).

It would have been obvious to one having ordinary skill in the art to modify the invention of Uchida to include modifying the next required inspection of each plant component based upon inspection result information to provide a sortable schedule of future inspection requirements, as taught by Miyazaki, because, as suggested by

Miyazaki, the combination would have provided a method for generating a proper inspection schedule based on actual conditions of the component to enable a systematic maintenance and a preventive maintenance schedule thereby optimizing maintenance and inspection costs while enhancing the overall safety of the plant (column 2, line 66 to column 3, line 10).

Further, although the invention of Uchida, Ikeda, and Miyazaki doesn't specifically disclose configuring the server system to delete information or that the monitoring system include a program and associated code segments stored on a computer readable medium, it would have been obvious to one having ordinary skill in the art to include deleting information because the combination would have allowed further data management, allowed the user to correct mistakes by removing data incorrectly entered, and would have performed a step, taught by Uchida and Ikeda, functionally equivalent to continuously updating information. Also, it is considered inherent that in order for the monitoring device to perform the aforementioned computer-implemented method, the computers must contain a programmed code containing necessary associated code-segments.

3. Claims 2, 7-9, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. in view of Ikeda et al. and Miyazaki and further in view of U.S. Patent No. 4,642,215 to Klinvex et al.

As noted above, the invention of Uchida, Ikeda, and Miyazaki teaches many of the features of the claimed invention including cross-referencing component data

with inspection results and operation data for reactor welds, but does not teach a method for obtaining the weld data (i.e. ultrasonic testing) or specifically teach that the data correspond to inspection regulations or recommendations for the specific components (i.e. welds).

Klinvex teaches a universal tool for ultrasonic testing of nuclear reactor tubular objections such as vessels and their components parts, for locating various defects such as cracks and voids in the various weld volumes while being independent of the reactor vessel size and meeting future government regulations mandated for such testing (column 3, lines 1-8).

It would have been obvious to one having ordinary skill in the art to modify the invention of Uchida, Ikeda, and Miyazaki to include a method for performing the weld inspection and specifying that the data correspond to inspection regulations or recommendations, as taught by Klinvex, because the combination would have provided the means necessary to test the reactor welds, taught by Uchida, and further, as suggested by Klinvex, by cross-referencing the component data against inspection regulations the combination would have provided a method for determining, not only whether the components meet inspection criteria set by the plant operator, but also whether the components meet the inspection regulations required by law (column 1, lines 39-57 and column 4, line 64 to column 5, line 9).

4. Claims 12, 13, 18-20, 22 and 24-27 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Uchida et al. in view of Ikeda et al. and Miyazaki and further in view of U.S. Patent Application Publication No. 2002/0123864-A1 to Eryurek et al.

As noted above, the invention of Uchida and Ikeda teaches many of the features of the claimed invention including monitoring a plurality of plants from one central location, but does not specifically disclose a manner in which to present the information to the user.

Eryurek teaches remote analysis of process control plant data comprising monitoring component operation and transmitting the data over a bus, wireless communication system, or network connection running a XML protocol server (0053-0055) to a remote site that runs and oversees the operation of the power generating and distribution equipment (0050-0051) and produces a corresponding report to a user/client system using an Internet browser (0157) that allows the selection/entering of individual component and plant data options through a corresponding display including user-friendly menus, such as pull-down menus that filter the data and display the stored data by component/criteria selection as requested by the user (Figures 20, 27, and 37-41).

It would have been obvious to one having ordinary skill in the art to modify the invention of Uchida, Ikeda, and Miyazaki to include a specific manner in which to present the information to the user, as taught by Eryurek, because, as suggested by Eryurek, the combination would have provided a method for conveniently displaying results of diagnosis of many different aspects of plant operation to one location for

easy monitoring and control by an operator and therefore eliminated the need for more physical user interaction (0006, 0010, and 0014).

Further, Applicant fails to provide the criticality of the claimed feature of submitting a request through pull-down lists. Therefore this aspect is considered an engineering design choice and, since the invention of Uchida, Ikeda, and Miyazaki teaches a functionally equivalent method for receiving inquiries, this feature is not considered patentable over the prior art.

5. Claims 21, 23, and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. in view of Ikeda et al., Miyazaki, and Eryurek et al. and further in view of U.S. Patent No. 4,642,215 to Klinvex et al.

As noted above, Uchida in combination with Ikeda, Miyazaki, and Eryurek teaches many of the features of the claimed invention including cross-referencing component data with inspection results and operation data for reactor welds, but does not teach a method for obtaining the weld data (i.e. ultrasonic testing) or specifically teach that the data correspond to inspection regulations or recommendations for the specific components (i.e. welds).

Klinvex teaches a universal tool for ultrasonic testing of nuclear reactor tubular objections such as vessels and their components parts, for locating various defects such as cracks and voids in the various weld volumes while being independent of the reactor vessel size and meeting government regulations mandated for such testing (column 3, lines 1-8).

It would have been obvious to one having ordinary skill in the art to modify the invention of Uchida, Ikeda, Miyazaki, and Eryurek to include a method for performing the weld inspection and specifying that the data correspond to inspection regulations or recommendations, as taught by Klinvex, because the combination would have provided the means necessary to test the reactor welds, taught by Uchida, and further, as suggested by Klinvex, by cross-referencing the component data against inspection regulations the combination would have provided a method for determining, not only whether the components meet inspection criteria set by the plant operator, but also whether the components meet the inspection regulations required by law (column 1, lines 39-57 and column 4, line 64 to column 5, line 9).

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-9 and 10-31 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent No. 4,998,208 to Buhrow discloses a piping corrosion monitoring system for calculating risk-level safety factors and producing an inspection schedule for a plant (column 1, lines 16-20) comprising a computer program that measures data specific to a component (i.e. corrosion rate of a pipe) during an inspection and

uses the inspection result to update/modify the required inspection data (column 6, lines 20-33, column 7, lines 22-27). Buhrow also teaches storing historical inspection records (column 7, line 63 to column 8, line 3) in to effect the updated inspection requirements (column 12, lines 12-24). Buhrow further teaches using inspection results to insure that the inspection schedule is updated to meet required safety standards (i.e. regulations) (column 13, line 67 to column 14, line 7).

U.S. Patent No. 5,321,629 to Shirata et al. teaches a facility inspection support apparatus.

U.S. Patent No. 5,428,547 to Ikea teaches a numerical control unit that pre-announces scheduled operations such as inspections.

JP Patent No. 10-222543 to Tanikoshi et al. teaches a checking, maintaining and supporting portable terminal for inspection schedules.

JP Patent No. 07-280978 to Shimizu et al. teaches a method and device for forming long-term inspection plans for a control rod drive mechanism.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. West whose telephone number is (703)308-1309. The examiner can normally be reached on Monday through Friday, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (703)308-1677. The fax phone numbers for the organization where this application or proceeding is assigned are

Art Unit: 2857

(703)308-7382 for regular communications and (703)308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

jrw  
October 20, 2003

  
MARC S. HOFF  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800